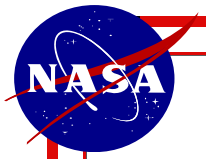

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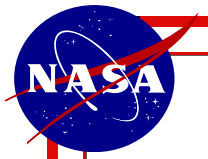
NETWORK

DESIGN



Previously there have been two phases in the design of a network

- **Department** Design
- **Interconnect** Design

Department

Previously departments

- Funded their networks
- Designed their Networks
- Installed their networks
- Managed their networks

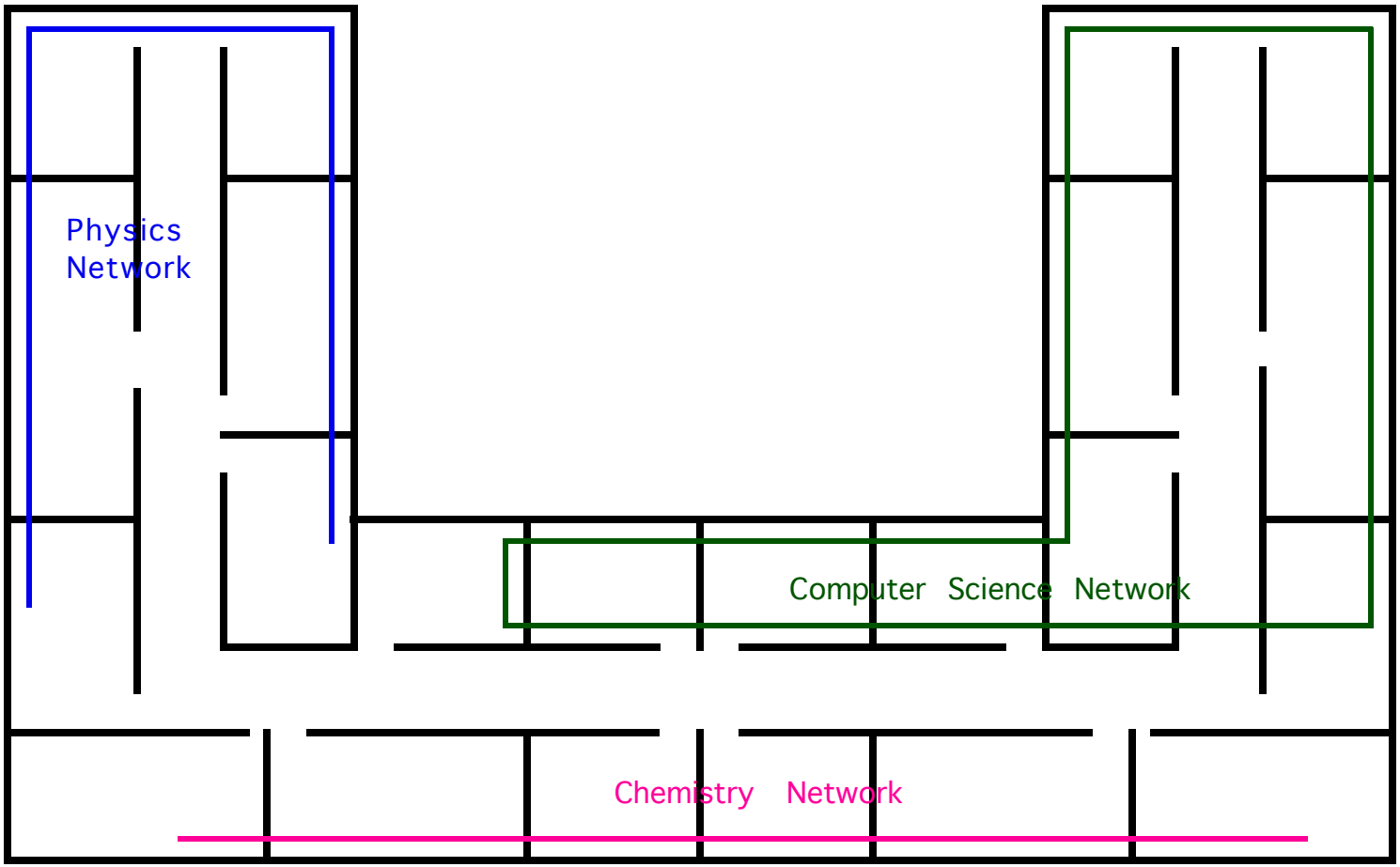
Department

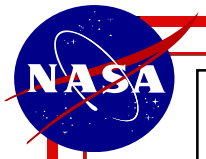
Each Department developed a network that suited their needs.

These networks were developed to serve the immediate need with no consideration for

- **Expansion needs**
- **Interconnection with others**
- **Standardization**
- **Compatibility with Future Standards**

Department


Physics
Network
Computer Science Network
Chemistry Network



Department

These networks were of two Types

- **IBM Token Ring**
- **10Mbs Ethernet**

These were of various types and supported various protocols TCP/IP, DECnet, IPX, AppleTalk

Interconnect

Once several departmental networks had been installed the next step was to interconnect them.

Because there was no standardization this was difficult.

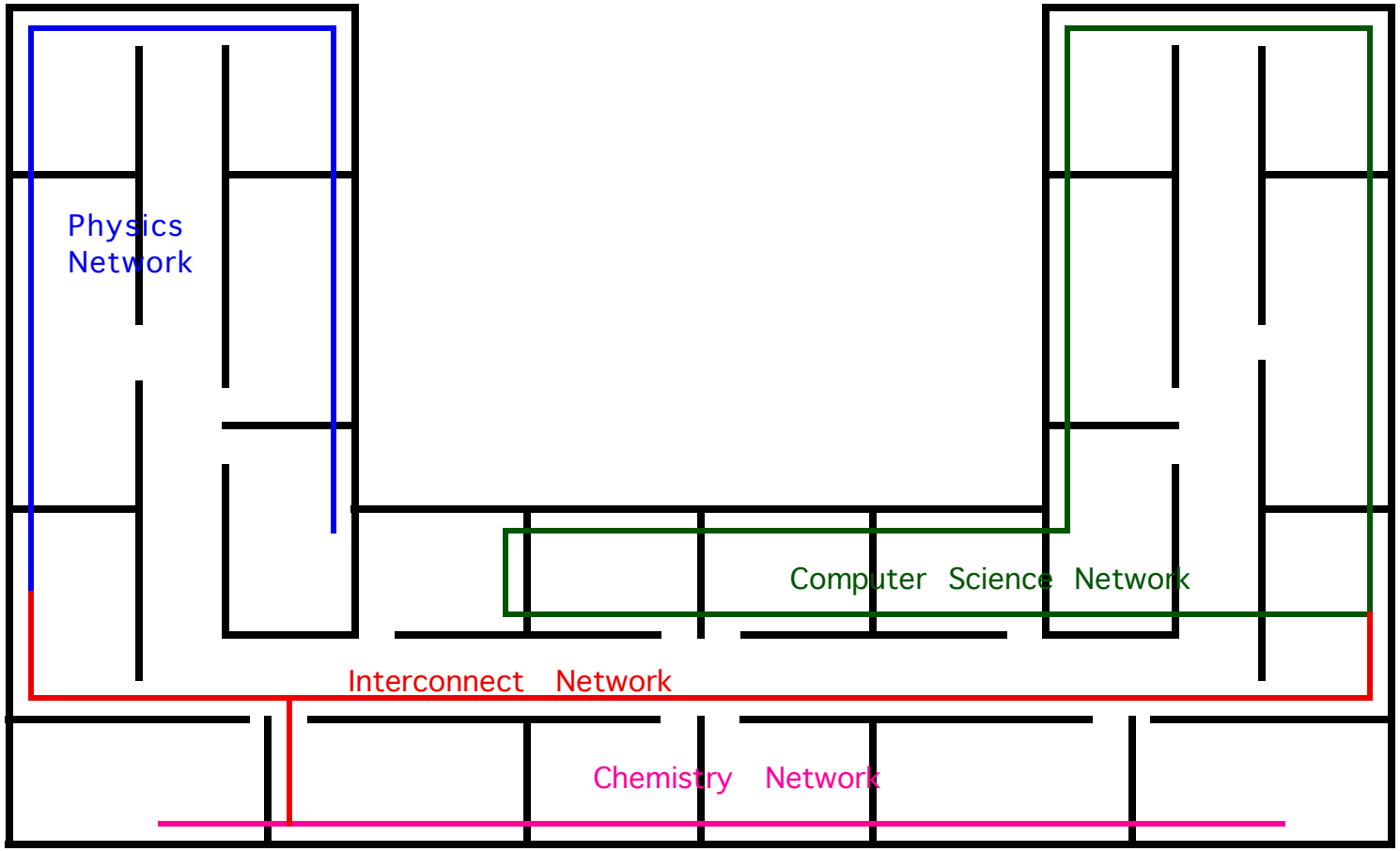
In most cases full interoperability was not possible.

Interconnect

The result was a network

- With multiple standards
- Composed of semi compatible sub nets
- Without full functionality
- Based on older technologies

Interconnect



Network Consists of

CABLE PLANT

NETWORK EQUIPMENT

WORKSTATIONS AND PRINTERS

CABLE PLANT

The cable plant is the network cabling and associated patch panels and connectors.

CABLE PLANT

Cable Plant is the most:

- **expensive single part of your network**
- **failure prone part of your network**
- **likely place for reducing cost**

CABLE PLANT

A good cable plant alone will not

make a good network.

HOWEVER,

<u>the easiest way to make a bad network</u>

<u>is with a poor cable plant</u>

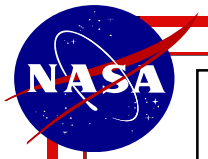
CABLE PLANT

The few dollars saved by cheap

Cable, Connectors and Shoddy Installation

Will cost many times more in

Maintenance and Down Time.



CABLE PLANT

PLAN FOR THE

FUTURE

design your cable plant with

tomorrows network in mind

" INSTALL CABLE ONCE"

CABLE PLANT

Todays network is based on

10 megabit per second technology.

With a little care in the design and

Minimal Additional Cost

we can support tomorrows

100 megabit per second technology.

CABLE PLANT

This can be achieved by installing

a CAT-5 Certified cabling System.

CAT-5 COMPLIANT

is *NOT*

CAT-5 CERTIFIED

CABLE PLANT

Cat-5 is a EIA/TIA proposed addition for the EIA/TIA 568 standard

It is a standard for 100 MHz Unshielded Twisted Pair Cable and connectors

CABLE PLANT

All associated hardware must also be CAT-5

- **Connectors**
- **Patch Panels**
- **Wall Jacks**

CABLE PLANT

Obviously it will take more than quality components to make a superior network.

A Structured cabling system is required to take advantage of today's requirements and provide service to emerging technologies.

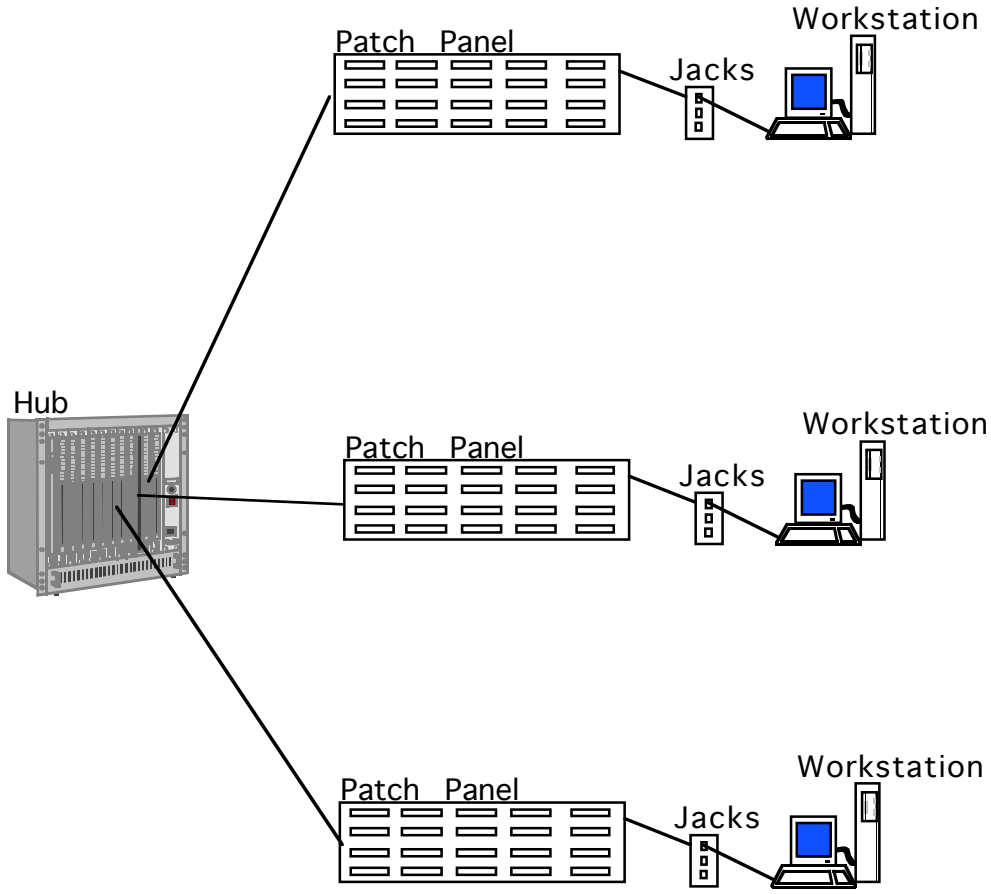
CABLE PLANT

In a structured cabling system each device is wired to a central point using a star topology.

This facilitates system interconnection and allows for simple expansion and reconfiguration.

The simplicity of a generic cable structure is innately superior to many separate and different cable systems.

Star Topology Diagram



CABLE PLANT

A Cat-5 star configuration offers these advantages

- **Network Scalability**
- **Standardization**
- **Services**
- **Network Management and Reliability**

Network Scalability

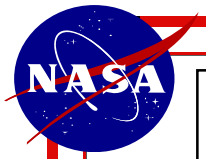
- Performance as required
- Design Flexibility
- Protocol and application independent

Standardization

- Compliant with industry standards
- Identical Physical Network Interfaces
- Standardized Network Equipment
- Interoperability

Services

- Installation
- Troubleshooting
- Maintenance



Network Management and Reliability

- Fault Management
- Performance Management
- Configuration Management
- Security Management

General Strategies

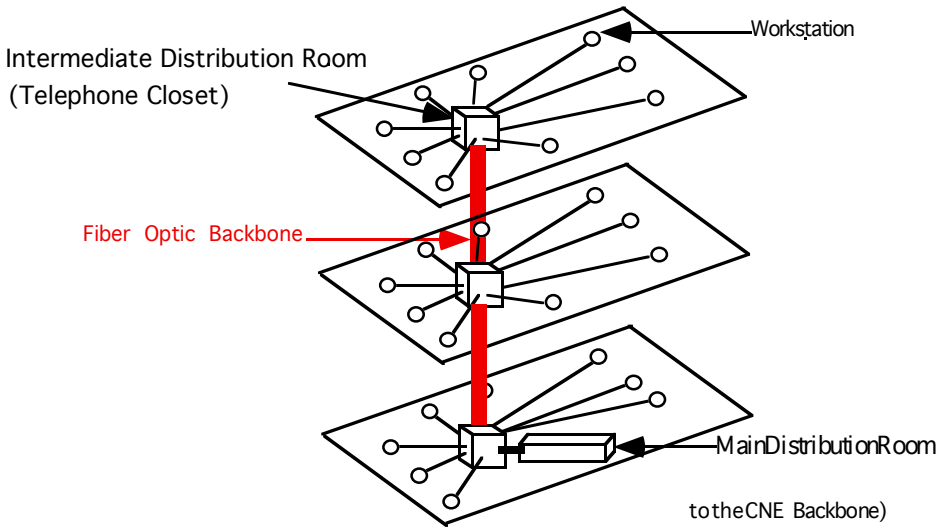
- Always use wall mounted outlet boxes
- Use duct for all cable runs
- Mark all cables at both ends
- Have spare cable drops
- Neatness Counts

CABLE PLANT

For cable runs too long for cat-5 such as between floors and buildings use fiber optic cables.

Fiber Optic cable will support any transmission rate that Cat-5 will handle.

CABLE PLANT


Workstation
Intermediate Distribution Room
(Telephone Closet)
Fiber Optic Backbone
MainDistributionRoom
totheCNE Backbone)

Careful construction of your
Cable Plant will support any

NETWORK EQUIPMENT
And
WORKSTATIONS AND PRINTERS

that you have presently and into the
next generation of networks